

The listing of claims will replace all prior versions, and listing, of claims in the application:

**LISTING OF CLAIMS**

Claim 1-8. (Canceled)

Claim 9. (Currently Amended) A conductive polymer membrane article, having a conductivity selected from the group consisting of electrical, ionic, and photoelectric, said article comprising:

a non-woven membrane of polymer fibers, wherein at least some of the fibers have diameters of less than one micron;

said polymer fibers are formed from a spin dope that includes:  
a matrix polymeric material, a conductive polymer and conducting nanoparticles,  
said matrix polymeric material include polymer selected from the group  
consisting of polyurethane (PU), polyethylene oxide (PEO), polylactic acid (PLA), polyvinyl acetate (PVA), and cellulose acetate,

said conductive polymer selected from the group consisting of polythiophene, polyphenol, polyacetylene and polyphenylene, and

said nonwoven membrane has an electrical conductivity of at least about  $10^6$  S/cm,  
wherein said matrix polymeric material further includes a photo-reactive dye, said dye being  
selected from the group consisting of phthalocyanines, ruthenium complexes with organic  
ligands, and porphyrins.

Claim 10 (Currently Amended) The conductive polymer membrane article of claim 46 9 wherein the nonwoven membrane includes photonic absorption and is photoelectric.

Claim 11. (Previously Added) The conductive polymer membrane article of claim 10 wherein the nonwoven membrane produces a current of at least  $10^{-9}$  amps/cm<sup>2</sup>.

Claim 12. (Previously Amended) The conductive polymer membrane article of claim 9 wherein the conducting nanoparticles are embedded in the polymer fibers.

Claim 13. (Previously Added) The conductive polymer membrane article of claim 9 wherein the conductivity is created by the inclusion of the conducting polymer in said polymer fibers.

Claim 14. (Previously Added) The conductive polymer membrane article of claim 9 wherein the conductivity is created by the inclusion of conducting nanoparticles embedded in the membrane polymer fibers.

Claim 15. (Currently Amended) The conductive polymer membrane article of claim 9, having a conductivity selected from the group consisting of electrical, ionic, and photoelectric,

said article comprising:

a non-woven membrane of polymer fibers, wherein at least some of the fibers have diameters of less than one micron;

said polymer fibers are formed from a spin dope that include:

a matrix polymeric material, a conductive polymer and conducting nanoparticles,

said matrix polymeric material include a polymer selected from the group consisting of polyurethane (PU), polyethylene oxide (PEO), polylactic acid (PLA), polyvinyl acetate (PVA), and cellulose acetate,

said conductive polymer selected from the group consisting of polythiophene, polyphenol, polyacetylene and polyphenylene, and

said nonwoven membrane has an electrical conductivity of at least about  $10^{-6}$ S/cm,  
wherein said matrix polymeric material further includes a chemical indicator dye in a dimethyl formamide solution of polyurethane, said dye being selected from the group consisting of phenol red, thymol blue, and phenolphthalein; and wherein said indicator dye is added to the polyurethane solution at a level of 1-10% by weight.

Claim 16. (Canceled)